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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/750,891	01/05/2004	Holger Puchta	532622003100	2084

7590 03/22/2007
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EXAMINER

ZHENG, LI

ART UNIT	PAPER NUMBER
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1638

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/22/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/750,891

Applicant(s)

PUCHTA ET AL.

Examiner

Li Zheng

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 5-26, 29 and 30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 27 and 28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's amendments to claims 1 and 4, and amendments to the specification filed on 1/17/2007 are acknowledged.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. The rejection of claims 1-4 under 35 U.S.C. 112, second paragraph is withdrawn due to claim amendment.

Election/Restrictions

4. During the examination, it was determined that it would not be an undue burden to search and examine the invention groups I together with claims 27 and 28. As a result, claims 1-4 and 27-28 are examined on the merits.

Applicants are advised that since the restrictions between Group I and claims 27-28 are withdrawn, if any claim(s) that include(s) the limitation of the examined claims is/are presented in a continuation or divisional application, the claim of the application may be subject to a provisional statutory and/or nonstatutory double patenting rejection over the claims of the instant application. Where a restriction requirement is withdrawn, the provisions of 35 U.S.C. 121 no longer apply. MPEP804.01.

Claim Rejections - 35 USC § 102

5. Claims 1-4 remain and claims 27-28 are rejected under 35 U.S.C. 102(b) as being anticipated by Lyznik et al. (hereafter "Lyznik"), for the reasons of record stated in the Office action mailed July 17, 2006. Applicants traverse in the paper filed January 17, 2007. Applicants' arguments have been fully considered but were not found persuasive.

Applicants argue that in Figure 1 of Lyznik, the FRT recognition site is outside the intron sequence of Ubi-I gene (the 2nd paragraph from the bottom of page 9). However, the FRTm, a recognition sequence for site-directed induction of DNA double-strand breaks, is between two homologous sequences. Furthermore, FLP recombinase of Lyznik is considered as the enzyme that is suitable for inducing breaks at a recognition sequence.

Applicants further argue that the specification teaches that the sequence which are deleted are those located between the homology sequences A and B, which is contrary to the teaching of Lyznik (the paragraph bridging pages 9-10). However, the construct of Lyznik meets all the structure limitations set forth in claim 1. In addition, there is no functional limitation set forth in claim 1.

Applicants finally conclude that Lyznik does not teach or disclose the method of claimed and thus does not anticipate the claim. The examiner disagrees. First, the instant claims are drawn to a recombination system, not to a method of homologous recombination. Regardless the fact that the intended use of the system of Lyznik may or may not be the same as that of the instant claims, the system of Lyznik nevertheless contains all the elements cited in the instant claims, therefore anticipates the instant invention.

6. Claims 1-4 remain and claims 27-28 are rejected under 35 U.S.C. 102(e) as being anticipated by Dujon et al. (hereafter "Dujon"), for the reasons of record stated in the Office action mailed July 17, 2006. Applicants traverse in the paper filed January 17, 2007. Applicants' arguments have been fully considered but were not found persuasive.

Applicants argue that Figure 25 of Dujon discloses that LTR each contain an I-Sce I recognition site and conclude that the endonuclease of Dujon cuts within the homologous sequence, not in between the homology sequences as in the present invention. However, clearly shown in Figure 25B, two homologous regions A and B (either open boxes or filled boxes), which meet the requirement of at least 20 bp and over 70% identity, still pair and recombines (Figure 25B, part 1) and 2)) just like the way illustrated in Figure 1 of instant application. The homologous sequence may not be the full length of LTR but rather either side of the LTR divided by the I-SCE I site.

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Applicants further argue that if more than I-Sce I site is cut, no homologous region is even available. Applicants are reminded that I-Sce I is an enzyme recognizing an 18-base cutting site, which is considered to be extremely rare in any genome.

Applicants finally argue that Figure 25 B3 of Dujon only repair the ends, not homologous recombination of the homology sequence as in the present invention. However, as discussed above, Figures 25 B1 and 25 B2 both show homologous recombination of the homologous sequences as in the instant invention.

Summary

Claims 1-4 and 27-28 are rejected.

No claim is allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

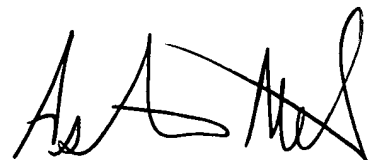
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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Li Zheng whose telephone number is 571-272-8031. The examiner can normally be reached on Monday through Friday 9:00 AM - 5:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached on 571-272-0975. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



ASHWIN D. MEHTA, PH.D.
PRIMARY EXAMINER